

Sept. 8 is Sign-Up Day For Fall UofH Classes

Registration for the fall semester of classes at the University of Houston Clear Lake City Center will be held September 8 at the MSC News Center, Nassau Bay Bldg 6. The hours will be from 9 to 11:30 am and from 1 to 3:30 pm for students enrolling in classes *only* at the Clear Lake City Center.

Late, audit and combination (part Clear Lake and part main campus classes) registration will be on September 21 from 9 to 11:30 am. Combination students must register on the main campus first, and main campus Student Program Forms and Fee

Slips must be presented for registration for Clear Lake classes. Non-credit (audit) students may register only on September 21.

Classes begin September 18 and run through January 27.

MSC employees wishing to enroll in courses at Clear Lake or on the main campus should submit an Application for Training (MSC Form 75) to the Employee Development Branch (BP3).

The schedule of classes to be offered this fall at the Clear Lake City Center is as follows:

COURSE	TIME & DAYS	COURSE TITLE
COLLEGE OF ARTS AND SCIENCES		
Department of Mathematics (MTH)		
MTH 431	3-430PM MW	Introduction to Analysis
MTH 439	3-430PM TTH	Selected Topics in Mathematics
MTH 471	430-6PM MW	Advanced Mathematical Statistics
MTH 631	3-430PM MW	Theory of Functions of a Complex Variable
MTH 663	430-6PM MW	Theory of Matrices
MTH 667	430-6PM TTH	Point Set Topology
Department of Physics (PHY)		
PHY 461	730-9AM MW	Celestial Mechanics
PHY 493	730-9AM TTH	Modern Physics III
Department of Political Science (POI)		
POI 633	3-6PM MON	Seminar in Public Law
POI 638	3-6PM WED	Seminar in Public Administration
COLLEGE OF BUSINESS ADMINISTRATION		
Department of General Business Administration (GBA)		
GBA 630Q	3-6PM TUE	Introduction to Statistical Analysis
COLLEGE OF ENGINEERING		
Department of Chemical Engineering (CHE)		
CHE 730	730-9AM MW	Selected Topics—Systems Simulation Techniques
Department of Electrical Engineering (E.E)		
E.E 566	4-530PM TTH	Solid State Electronics
E.E 575	4-530PM MW	Control Engineering
E.E 576	4-530PM MW	Communication Theory
E.E 731	4-530PM TTH	Non-Linear and Time-Varying Feedback Control Systems
Department of Industrial Engineering (I.E)		
I.E 471	730-9AM TTH	Operations Research I
I.E 533	730-9AM MW	Operations Research II
Department of Mechanical Engineering (M.E)		
M.E 631	730-9AM MW	Advanced Thermodynamics I—Classical
M.E 633	730-9AM TTH	Advanced Heat Transfer I—Conduction
M.E 660	730-9AM WF	Introduction to Advanced Dynamics
M.E 690	730-9AM TTH	Engineering Analysis I
M.E 730	730-9AM TTH	Selected Topics—Foundation of Astrodynamics

Newell Takes Top Post In NASA Management

Dr. Homer E. Newell last week was named NASA Associate Administrator by Administrator James E. Webb, effective October 1, 1967.

Newell has been NASA's Associate Administrator for Space Science and Applications, one of the agency's four program offices, since 1963. In his new position, Newell will work closely with Webb and Deputy Administrator Dr. Robert C. Seamans, Jr., on the planning, development and conduct of the nation's space program. D. D. Wyatt, NASA's Assistant Administrator for Program Plans and Analysis, will report directly to Newell.

Newell came to NASA in October 1958 from the position of Acting Superintendent of the Atmosphere and Astrophysics Division of the United States Naval Research Laboratory to

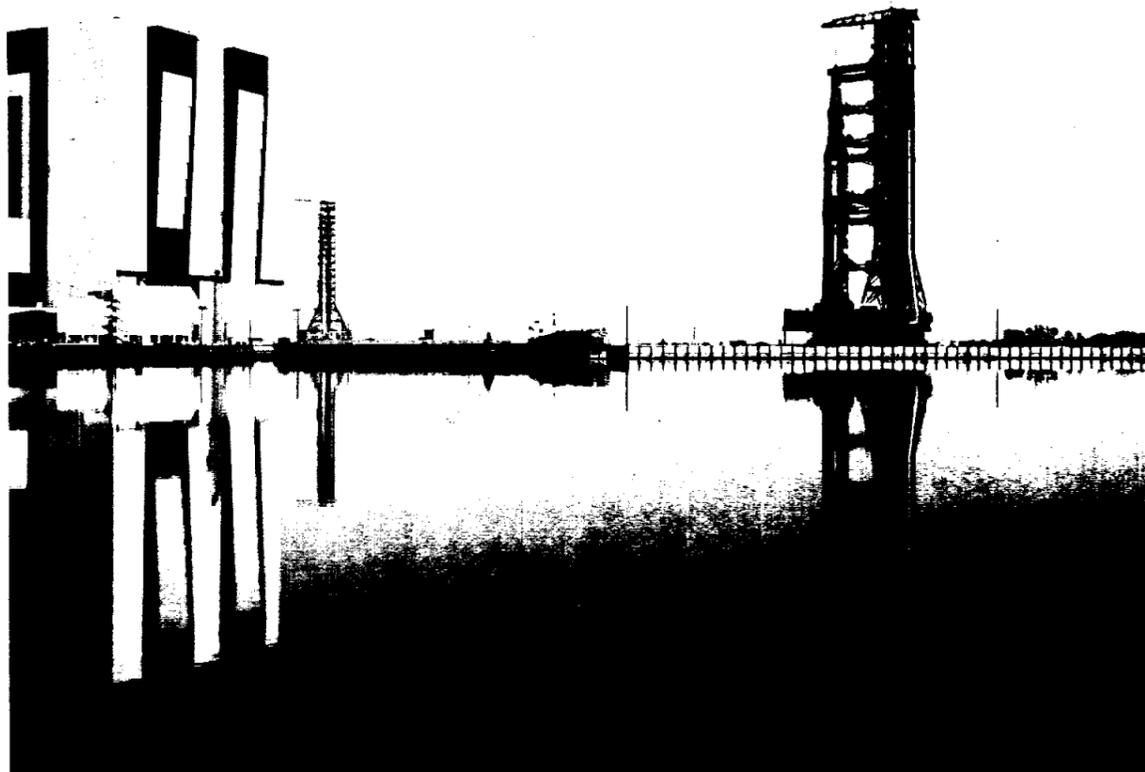
take charge of the planning and development of a space science program for the newly-created agency.

Shortly thereafter, he was named Deputy Director of Space Flight Programs. From November 1, 1961, he was Director of the Office of Space Sciences until he assumed the position of Associate Administrator for Space Science and Applications November 1, 1963.

Newell is internationally known in the field of atmospheric and space sciences, and holds a number of awards, including the President's Award for Distinguished Federal Civilian Service for 1965.

He is the author of numerous scientific articles and books. He is a member of Phi Beta Kappa, Sigma Xi and an honorary member of Sigma Pi Sigma.

Sub-Suborbital Speed



EARLY MORNING START—The crawler transporter carrying Apollo IV and its mobile launch tower inches along the crawlerway from the KSC Vehicle Assembly Building toward Launch Complex 39. The three-and-a-half mile trip required nine hours 55 minutes. The height of the mounted mobile launcher is 445 feet. Elevators provide access to the swing arms and work platforms on the tower. Communications distribution systems and propellant, pneumatic, electrical and instrumentation systems are within the 380-foot tower, which is topped by a 25-ton capacity hammerhead crane.

ROUNDUP

NASA MANNED SPACECRAFT CENTER

HOUSTON, TEXAS



VOL. 6, NO. 23

SEPTEMBER 1, 1967

Mariner Detects Solar Flares On Venus Trip

Two solar flares, both described as of medium intensity, were detected last month by the Mariner V spacecraft en route from Earth to Venus.

Mariner V was launched by NASA last June 14.

Telemetry from Mariner, via the Goldstone, Cal., station of the Deep Space Network, was received as the flares occurred by scientists and engineers at NASA's Jet Propulsion Laboratory, Pasadena, Cal.

Interplanetary science instruments aboard the spacecraft showed large increases in measurements of solar radiation at 1:30 p.m. and again at 8:47 p.m. EDT August 1. Major changes in measurements were observed on the trapped radiation detector. Scientists expected similar readings by the solar plasma probe during following few days.

Occurrence of the Class Two flares was confirmed by the Solar and Geomagnetic Monitoring Service at Fort Belvoir, Va., where visual observations of the flares were made.

When the flares occurred, Mariner V was about 8,225,000 miles from Earth and 86,830,000 miles from the Sun.

August 3, the spacecraft was 8,650,759 miles from Earth and traveling at a velocity of 9,424 miles per hour relative to Earth. Mariner had flown 77,322,538 miles in its arcing trajectory to the planet Venus.

Saturn V Vehicle Makes Trip to Pad

The first flight model of the Saturn V launch vehicle August 26 crawled snail-like from the Vehicle Assembly Building at Kennedy Space Center the three and a half miles to Pad A of Launch Complex 39. Weighing more than 11.5 million pounds, the combined Mobile Launcher with the Apollo IV launch vehicle-spacecraft stack was moved by a diesel-electric crawler transporter.

Early this week the mobile service structure was moved into position on the pad in preparation for cabling for spacecraft systems tests, launch vehicle systems tests and propellant simulations.

The Apollo IV mission will be an unmanned test of the three-stage Saturn V launch vehicle and of the Apollo command module heatshield in simulated lunar-return entry velocities. The mission will be the first flight test of Saturn V's first stage (S-IC), second stage (S-II) and the first restart in orbit of the third stage S-IVB. The S-IVB in a slightly different version serves as the second stage for the Uprated Saturn I series.

Launch of the Saturn V is scheduled during the last quarter of 1967.

A second Saturn V launch vehicle (AS-502) is assembled in another high-bay area of the

Vehicle Assembly Building awaiting arrival of the Apollo spacecraft. The entire Saturn V stack is mated and undergoes some testing in the VAB prior to making the trip to one of Launch Complex 39's pads. In contrast, the Uprated Saturn I is assembled and tested on Launch Complex 37.

The Apollo IV vehicle successfully underwent one overall test using outside power and one overall systems test using internal power in the weeks before the trip out to the pad.

At Launch Complex 37, an Uprated Saturn I launch vehicle (AS-204) is being prepared for an earth-orbital unmanned test of the Apollo Lunar Module.

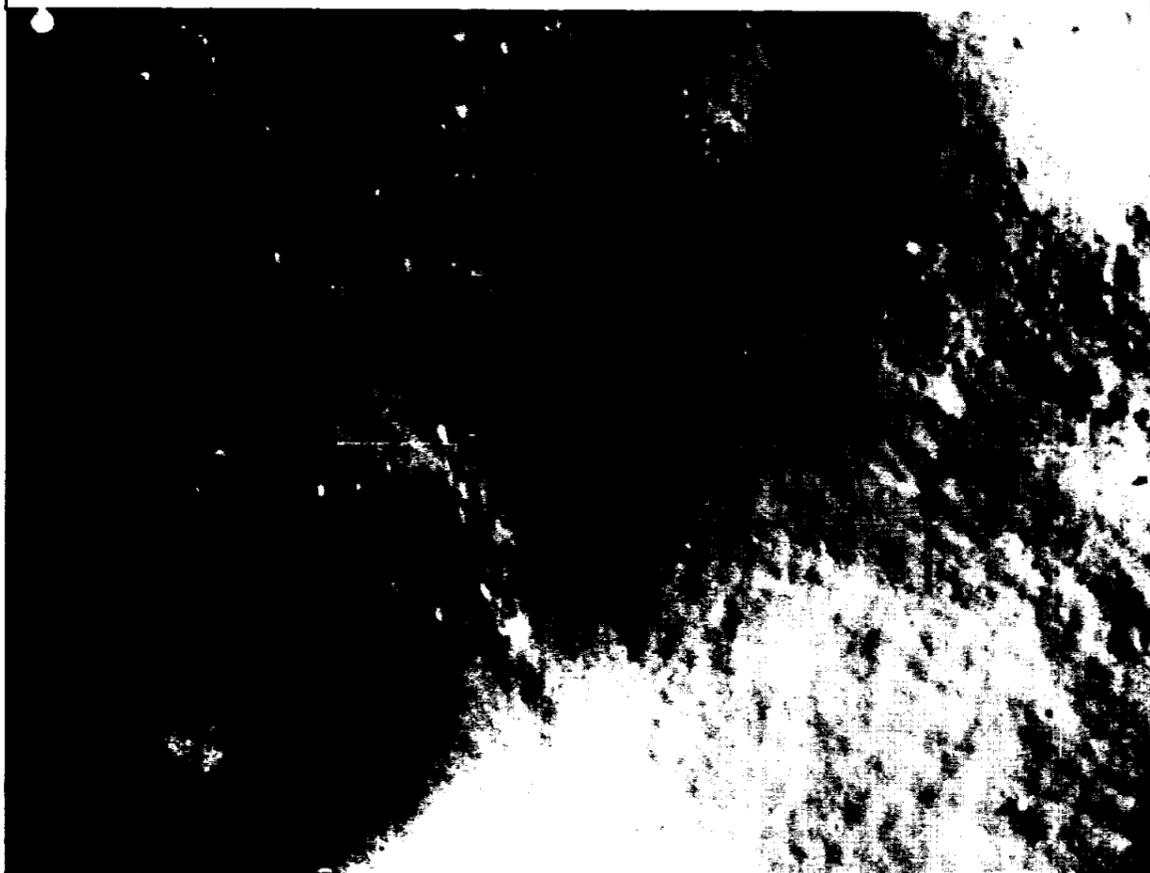
Solar Seminar Set September 6

A solar physics seminar sponsored jointly by MSC and the University of Houston will be held September 6 in the MSC Auditorium at 3 pm.

Titled "Solar Activity and Planetary Motions," the seminar will be conducted by Dr. Richard Head, manager of the Aeronautics Program Office at NASA Electronics Research Center, Cambridge, Mass.

For further information, call D. E. Robbins at 3588.

Marbles on the Moon



ROLLING STONES BUT NO MOSS—Lunar Orbiter V August 17 snapped this photo of two boulders which had rolled downhill inside the crater Vitello near the southern edge of Mare Humorum. The larger rock is about 75 feet across and left a trail about 900 feet long. The smaller rock is 15 feet across and left a 1200-foot-long trail. The rocks cast long shadows in this photo because of the low sun angle. Geologists consider Vitello to contain an unusually large number of rocks, revealed for the first time by Lunar Orbiter photography. This photo was made from an altitude of about 100 miles and is an enlargement of a telephoto frame.

Four Have PLT Roles In 'Anne Frank Diary'

Four members of the MSC "family" are engaged in Pasadena Little Theatre's production of "The Diary of Anne Frank" which opens September 7. Jo Simmons, wife of PPD's Bill Simmons, is directing the production. Alan Glines of Flight Control Division, Jim Myers of Philco-Ford, and Helen Crupain, the wife of Philco-Ford's Howard Crupain, are cast in the play.

Jo is well known for her acting and directing ability. At Clear Creek Country Theatre she played in "Affairs of State" and directed "The Heiress" which was voted "Best Play 1966-67" and captured three individual acting awards. At PLT she has played leading roles in "A Streetcar Named Desire", "Gypsy", "Glass Menagerie", "Bad Seed", and "The Miracle Worker" and directed "A Major-

ity of One", "Hasty Heart", and "Monique".

Glines played a leading role in PLT's "Under the Yum-Yum Tree" last season. Before joining MSC he attended the University of Kansas where he acted with the University Players, playing in a number of shows including "Glass Menagerie" and "The World of Sholem Aleichem". In "Diary", Alan plays the role of Mr. Dussell, an elderly dentist who is taken into hiding by the Franks.

Jim Myers is Vice President and Ticket Chairman of PLT this year and is one of the group's hardest working members. He plays Mr. Kraler, a Dutchman who is instrumental in hiding the group and is their life-line to the outer world for two years. Jim has played in "Gypsy", "Miracle Worker", "A Majority of One", and "A Streetcar Named Desire". Last season he achieved a first for PLT by selling two special performances of "Streetcar" to employees of Philco-Ford at MSC.

Contracts Let For Ion Engine Development

Four contracts, totaling more than \$5 million, have been awarded by NASA for major systems of the SERT II spacecraft.

SERT II (Space Electric Rocket Test) is an orbital mission planned for late 1968 to advance the development of ion engines as propulsion units for future long duration space missions.

Fairchild Hiller Corp., Germantown, Md., was awarded \$2,462,678 for system definition selection and qualification of components for the spacecraft support unit. The contractor is also responsible for integration of the following systems into the unit: spacecraft command system, power system, telemetry, control moment gyroscope, data storage and instrumentation.

Hughes Aircraft Co., El Segundo, Calif., and Westinghouse Electric Corp., Aerospace Electrical Division, Lima, Ohio, will develop the prime and backup power conditioning and control systems for the ion thrusters.

The Hughes contract for the prime system amounts to \$1,308,065. The Westinghouse backup contract is for \$1,055,757.

The electrical power for the SERT II spacecraft will be supplied by solar cells. The job of the power conditioner will be to take one kilowatt of power at 56 volts from the two solar panels and convert to the types of power needed by the various sections of the ion engine.

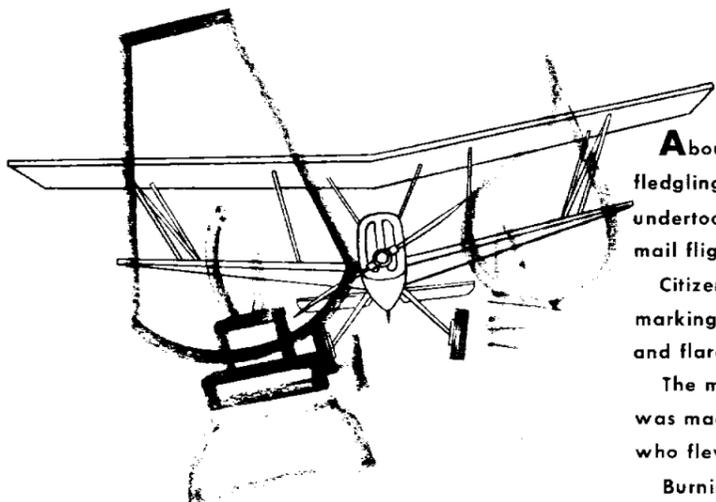
Airborne Instruments Division of Cutler-Hammer Corp., Melville, N. Y., was awarded a \$290,987 contract to develop a radio frequency interference experiment to measure interference with radio communications generated by the ion engines.

The four contracts were awarded by NASA's Lewis Research Center, Cleveland, which is responsible for the SERT program.

Helen Crupain completes the MSC contingent in the production. She is admirably suited for her role in "Diary"—that of Mrs. Frank, the mother of Anne, and promises to give a memorable performance in a most sensitive role. A newcomer to PLT, she worked backstage in the summer production of "Fanny, the Frivolous Flapper".

"Diary" tells the story of Anne Frank, the youngest of a group of eight Jews who for over two years hid in a cramped attic over a warehouse in Amsterdam to escape the Gestapo. The play is based on an actual diary of a young girl, and other records attest to its authenticity. The group never went outdoors, never stood by a window in daylight, kept absolutely silent for ten hours each day when employees were in the warehouse below, never discarded rubbish which could betray them, never drew water or flushed the toilet when others were in the building. The play is a portrait of adolescence — that of a vital young girl who aspired to a career as a writer. "Diary" is an extra-ordinary mirror of a human being on the threshold of life — temperamental, impulsive, brash, but also intelligent, thoughtful and affectionate. When drama awards were given out in 1956 "Diary" made a clean sweep — Antoinette Perry Award, Critics Circle Award, and the coveted Pulitzer Prize.

"Diary" will be presented in PLT's Playhouse at 3339 Tulip, just south of Spencer Highway and east of the Bayshore Hospital, at 8:30 pm Thursdays thru Saturdays for four weeks starting September 7. Tickets and reservations are available by calling the Theatre (HU 6-9976) or thru Foley's Ticket Center (CA 8-3311). Admission is \$2; for students under 18, \$1. Special prices are available for half-house groups and for special performances.



About to lose federal support of the fledgling, U.S. airmail service, volunteers undertook the first transcontinental mail flight involving night flying.

Citizen groups organized to build bonfires marking the course between cities and flares were burned at landing fields.

The most memorable leg of the flight was made by James H. (Jack) Knight, who flew 650 miles in total darkness.

Burning flares guided him on his way, thus proving the value of ground guidance.

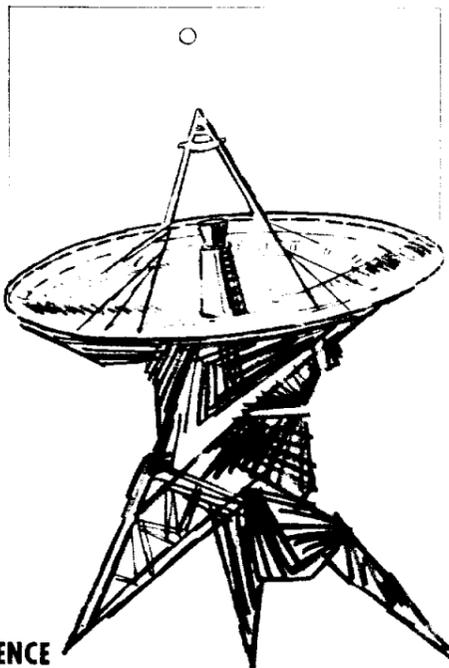
FEBRUARY 22, 1921

The bonfires and marked rooftops which guided mail flyers of the Twenties are far from the network which will support Apollo missions to the moon.

This system will involve some 14 land-based tracking stations, 3 ships, 8 planes, and several earth satellites. As space missions progress, flight information will flow to Mission Control Center at 2400 bits per second, or about 40 times as rapidly as Gemini.

Thousands of people maintain and operate this system; thousands of others were involved in its design and construction.

Clearly, Apollo is a team program and success depends on the best of each of us—every day.



Superior Performers



Eunice B. Tyer D. W. Richardson Vera J. Allen
 Reproduction Services Supply Branch Public Affairs Office

Balloon Payload Falls into Ocean

A 9,000-lb payload from a balloon fell in the ocean 100 miles from San Francisco. August 9 but scientists obtained excellent telemetry data from the 9.5-hour flight.

Instruments in the payload, believed the heaviest ever carried by a balloon, measured cosmic radiation and nuclear interactions of primary particles, and gained valuable new information on the mass and momentum of particles entering the Earth's atmosphere. It was launched by the University of California Space Sciences Laboratory for NASA.

After launching from Chico Airport, Cal., at 6:55 am CDT August 9, the balloon ascended to 90,000 feet to begin its investigation of the upper atmosphere. At approximately 4:30 pm CDT ground stations commanded the heavy payload to cut away from the balloon.

When its parachutes failed to deploy, the instrument payload plummeted into the ocean. It fell within 20 miles of a recovery barge. Although flotation gear was attached, scientists are now awaiting word whether their instruments survived the impact. Laboratory personnel said they would be unable to determine the reason for the parachute failure until the capsule is recovered.

The 16,000 lbs. of helium that lifted the huge balloon were provided by the Office of Naval Research. The National Center

Ex-Spars Sought

Virginia DeFoy, Photographic Technology Laboratory, is trying to locate former Spars (women's Coast Guard) in the Houston area.

The Spars' silver anniversary will be celebrated November 23-26 at the Hotel Biltmore in Palm Beach, Fla.—principal Spar training center during World War II.

Former Spars and anyone knowing of former Spars are urged to contact Virginia at 5319 Darlighthurst, Houston 77045, ID 3-4654.

'Cyclists Scramble

Final details last night were planned at the MSC Motorcycle Club meeting for the club trip to the International Scrambles in Laredo on Labor Day.

For club activities and meeting place information, call Bill Moore at 2291 or F. B. Patton at 3860.

for Atmospheric Research, Boulder, Colo., furnished the special "Stonehenge" equipment that successfully launched the balloon.

Mission tracking was provided by the Air Force Air Defense Command, Medford, Ore., and by the Federal Communications Commission, Livermore, Cal.

Weather personnel of the US Air Force Sixth Weather Wing, helped launch personnel select optimum conditions for launch and provided data on conditions aloft during the mission.

EAA Offers Theater Party Discount Cards

Through an arrangement with Nell Harris Associates, Inc., the MSC Employee Activities Association is offering family Theater Party memberships at \$1 each to MSC and contractor employees.

Theater Party members receive 20 percent discounts on all tickets, which can be reserved at the Harris ticket office at NA 1-1297 or bought at Foley's ticket offices.

Booked for the 1967-1968 season are the following Jones Hall events:

Friday, November 3: Pianist Roger Williams with show including singer and orchestra.

Wednesday, November 20: "Capriccio," Spanish ballet starring Molina.

Saturday, February 17: Brammel Fletcher as Bernard Shaw, one-man theatrical production.

Saturday, March 8: "Lion in Winter," Broadway comedy.

Saturday, March 23: Erroll Garner, jazz pianist with accompaniment.

Specials scheduled for the Houston Music Hall are:

Friday, February 2: The Clebanoff Strings and Orchestra.

Saturday, March 30: Benny Goodman's band.

Other events will be announced as schedules are firm.

Theater Party memberships are available from the following MSC employees: (Listed by name. Bldg/Room)

Bobbie Wright, 2/548; Sherman Kendall, 2/147; Bob Merrifield, 4/356; Terry White, NB6/226; Mary Lopez, 12/206A; Robert Dotts, 13/208; Donna Bowers, 16/2019; Kitty Cornish, 30/2033; Claude Ingels, 31/135; Beverly Hobbs, 45/516; Juanita Bower, 419/106, and Arminta Yanez, EAFB 330.

Manned Flight Advisory Group Extended 2-Years

The National Aeronautics and Space Administration will continue its Science and Technology Advisory Committee (STAC) for Manned Space Flight for two more years. Under previous arrangements, the committee would have disbanded last June 30.

The committee is composed of scientists who advise the Associate Administrator for Manned Space Flight on the scientific and technical content of manned space flight programs. The committee also advises on the methods for obtaining maximum use of the scientific and engineering talents and knowledge required for the success of the manned space flight program.

Chairman of the committee is Dr. Charles Townes, Massachusetts Institute of Technology.

Members are Dr. Lee A. DuBridge, California Institute of Technology; Dr. William Shockley, Stanford University; Dr. Leo Goldberg, Harvard University; Dr. Gordon J. F. MacDonald, Institute of Defense Analysis; Dr. William Sweet, Massachusetts General Hospital; Dr. Francis Clauser, University of California at Santa Cruz; Dr. W. G. Shepherd, University of Minnesota; Dr. John R. Whinnery, University of California at Berkeley; Dr. Stanley Bennett, University of Chicago; Dr. Louis Alvarez, University of California at Berkeley; Dr. George Zuidema, Johns Hopkins University Hospital; and Willis B. Foster, Director of Manned Flight Experiments in NASA's Office of Space Science and Applications, who is executive secretary of the committee.

Ex-officio members of the committee are the chairman of the Space Science Board, National Academy of Sciences—National Research Council; the NASA Associate Administrators for Manned Space Flight, Space Science and Applications and Advanced Research and Technology; and the NASA Director of Space Medicine, Office of Manned Space Flight.

Ames Evaluates Sterilizable Cell

Five battery cells capable of withstanding the high temperatures required to sterilize spacecraft designed for landing on Mars and other planets have been delivered to NASA by the Douglas Aircraft Company.

Developed at Douglas' Astropower Laboratory here, the one-ampere-hour silver zinc cells were delivered to Ames Research Center, Moffett Field, Calif., for evaluation under terms of a one-year, \$85,000 contract with the NASA facility.

Astropower scientists said the sterilizable cells will withstand temperatures of up to 145 degrees Centigrade (293 degrees Fahrenheit) for 108 hours, sufficient to sterilize an interplanetary spacecraft and prevent

Meet Mrs. Savings Bonds



RECENT VISITOR—Mrs. US Savings Bonds 1967, alias Mrs. Dorie Damuth of Magnolia, Texas, was a recent visitor to MSC as a part of her tour to promote the sale of Freedom Shares. Here, she examines Mercury spacecraft Faith 7 in the MSC Auditorium display area.

Model Rocketry Builds Youngsters' Character

"What those kids are doing today is teaching them to prepare, solve problems, learn procedures, and in addition, is developing their personality and character as well as their technical ability."

These were words used by MSC pilot Thomas K. Mattingly to describe the action he witnessed after opening NARAM 9, the National Association of Rocketry's Ninth Annual Meet in Mankato, Minnesota on August 15.

The meet, which lasted a week, was attended by seventy-five invited modelers from throughout the United States. NAR officials, hundreds of spec-

tators, and even a Czechoslovakian model rocketry representative (model rocketry has become a well organized, state-sponsored activity in Eastern Europe). A surprise visitor who arrived in time to present trophies was Vice-President Hubert Humphrey.

The MSC chapter, founded and sanctioned this summer by NAR, was represented by Bruce Reski, Bob Helton, and Bob Jones.

Model rocketry has grown from a very small beginning in 1958 to become an international sport enjoyed by people of all ages.

In addition to sport flying and competition, the local section seeks to promote the educational and motivational values of model rocketry through interesting programs and workshops.

The National Association of Rocketry was founded to devise codes and standards in order to make model rocketry safe. The NAR's stringent safety code is the guideline for all rocket firings. In addition, NAR members receive publications, decals, and insurance. The local club's next meeting will be on Wednesday, September 6 at 5 pm in Building 1 Room 163. If you are interested in taking part in this space age hobby, call Bob Jones at 4231 for more information.

contamination of a planet by living organisms from Earth.

Test programs conducted under the contract demonstrated that the capacity and overall performance of the cells were not degraded by the long exposure to the high temperatures.

In addition to a tolerance to high temperatures and excellent capacity retention, a sterilizable battery must be hermetically sealed, have high energy density and have a long charged stand life of up to 10 months, sufficient for the voyage to Mars.

Mission of the batteries on such a flight would include the provision of power for data transmission and operation of experiments.



OUT OF TEXAS' PAST—

Galveston's History I
Passages from a SabaThe Lafitte House
Galveston

THE TRUE STORY of Galveston Island reads like an adventure novel. Every foot of this 30-mile sand bar off the Texas coast has been ripped again and again by hurricanes, scorched by flames, plagued with epidemics, tortured with famine, or reddened with the blood of battle. It is a story of cannibal Indians and pirate gold; of the clash of swords, the twang of bowstrings, and the rattle of musketry. It is a story of black deeds and brave men.

Early in the 19th century, before a permanent settlement had been made, the island's history blazed to a tempestuous height. In this period, the fierce Karankawas, (or Carancahuas), who ate their enemies slain in battle, were pushed back from their hunting and fishing grounds by soldiers of fortune engaged in the struggle against Spanish rule in Mexico. The soldiers' stay was brief. While they were busy with their wars, the famous Jean Lafitte slipped in quietly with his lawless band and took over the island. For a time, Lafitte and his men shared the place with a somewhat more polished group of adventurers under the leadership of Generals L'Allemand and Rigaud, late of Napoleon's Imperial Guard.

Snakes and Shipwrecks

Galveston Island has had so many different names that it must have presented quite a problem to early map-makers. It was probably first discovered by Europeans in 1518 when Juan de Grijalva explored the Gulf coast for the Spanish government.

Two years later, the island was visited by Alonzo Alvarez de Pineda, and it is generally thought that Galveston Island was the Malhado (Misfortune) Island on which Cabeza de Vaca and a part of the expedition of Panfilo de Narvaez were shipwrecked in 1528. Whether the San Luis island identified by early Spanish navigators was Galveston Island or Velasco Peninsula (together with present San Luis Island) has not been satisfactorily determined.

It is generally believed that the name San Luis derives from LaSalle's visit to Texas, although there is some evidence that Luis de Moscoso, coasting from the mouth of the Mississippi River to Mexico, gave the name San Luis to present Galveston Island in honor of his patron saint.

Galveston Island for a time was known to Spanish navigators as *Isla Blanca* (White Island). Later some maps give the name of the island as *Isla de Aranjuez* after the summer palace of the Spanish monarchs near Madrid. Jose de Evia, who made a survey of the island, bay, and harbor in 1785, named the bay after Bernardo de Galvez, Viceroy of Mexico. Later, the island took the name of the bay. By many people, however, the island was called *Isla de Culebras* (Snake Island), because in early days it was infested with rattlesnakes. Even the Indians made their camp on a high shell ridge, to keep out of fang's reach of the deadly reptiles.

Several of the earlier names for Galveston Island, especially *Isla de Aranjuez* and *San Luiz*, persisted until the early 19th century.

Pirates and Privateers

Until about 1816, fish-eating Karankawas had Galveston Island all to themselves. They made no permanent camp on the island, but came over from the mainland in frail canoes, using the island as a hunting and fishing ground. In 1816, two prominent soldiers of fortune made their appearance on the scene. They were Don Luis Aury and Francisco Xavier Mina, who sided with Mexico in its revolution against Spain. They and their forces used the island as a base from which to prey on Spanish ships.

In 1817 Aury and Mina sailed on an expedition against the Mexican coast. They quarreled en route over matters of leadership, and the sulking Aury set sail back to Galveston. He found things not quite as he had left them. Sailing into Galveston Bay, Aury saw, to his consternation, that the island had been

occupied in his absence by the notorious pirate, Jean Lafitte, who had come up from Barataria, on the Louisiana coast, in search of better "hunting." After one long look at the frowning guns of Lafitte's ships commanding the bay, Aury sailed discreetly away, leaving Galveston in pirate hands.

Lafitte called his settlement Campeachy, or Campeche. In the center of the little empire he had flung up for himself, he built what he called his *Maison Rouge* (Red House). Black snouts of cannon, protruding from the upper story, discouraged mutiny on land and invasion by sea. Under Lafitte, Galveston "commerce" reached an all-time high in 1818. All that year, the bay was black with pirate ships and prizes taken on the high seas. Raiding craft slipped in and out of the harbor—leaving Galveston empty, returning loaded to the gunwales with loot from luckless merchantmen. Warehouses could not hold the spoils; boxes and bales were piled high on the sandy beaches. Slaves exchanged masters in brisk trading; Lafitte's standard price was a dollar a pound. Gold flowed in a heavy stream, flood-

ing the gambling halls, saloons, and other dens which dotted the island. Naturally, such "prosperity" attracted others. Their eyes burning bright with gold fever, soldiers of fortune, adventurers, pirates, and riffraff from all over the world converged on Galveston. Among the more elegant of these were some 400 adventurers led by two former officers of Napoleon's Imperial Guard—Generals L'Allemand and Rigaud. Establishing a settlement near the buccaneers, many of the officers and nobler element in the group of newcomers soon joined Lafitte in social diversions offered by the *Maison Rouge*.

Most historians agree that Galveston Island was practically deserted for a year or two after Lafitte left. Between 1822 and 1836, most of the people who visited there went as treasure-hunters, but all they found were Indian relics and a few scattered doubloons.

Early in the 1830's the Mexican Government built a small custom-house on the island. Later, when Texas revolted against Mexico, the Texans used Galveston as a naval base to prevent a Mexican blockade of their coast. The Texas Navy was based at Galveston, as were privateers hired by the Texans to prey on Mexican shipping. For a brief time in 1836, Galveston became the temporary capital of the Texas Republic. President ad interim David Burnet and his cabinet, who had fled from Harrisburg to escape Santa Anna's army, took brief refuge there just before the Battle of San Jacinto.

Permanent Settlement

First plans for a permanent settlement of Galveston began

Exit Lafitte

By 1819, Lafitte had just about played out his string at Galveston. The sands in the hourglass were running out, and so were his days on the island. Although he had issued strict orders to his men not to fire on United States vessels, one of his captains made the mistake in 1819 of firing on the U. S. cutter *Lynx*. Before the offended commanding officer could register a protest, Lafitte had hanged his disobedient captain, as he calmly put it, "for piracy."

But public sentiment against the pirate and his men rising out of this and similar incidents was not to be all of Lafitte's troubles. A hurricane blasted Galveston, sinking ships, drowning men, collapsing the *Maison Rouge*, and battering most of the settlement into ruins. Famine fol-

The history of Texas from its earliest exploration through its colonization and growth into a republic, and finally as a state of the Union, is an extremely interesting history. Through the courtesy of Humble Oil and Refining Company, articles from Humble's *Texas Sketchbook* will appear in the *Roundup* during the next several months. The articles were written by F. T. Fields. Pencil sketches and watercolors accompanying the articles are by the noted Texas artist E. M. "Buck" Schiwetz. Many of the places described in the series are within weekend driving distance of MSC.



Along Strand Street—Galveston

Reads Like tini Novel

to take shape in 1836, when Col. Michel B. Menard and his associates bought one league and one labor of land (about 4600 acres) from the Republic of Texas. Two years later, the first public sale of town lots was held. The City of Galveston was incorporated in 1839, and by the outbreak of the War Between the States had grown to a sizeable place of some 10,000 people. Between 1839 and 1861, the town's growth is a testament to the courage and tenacity of the settlers. Hardly a year passed without hardships and sacrifices; without new ravages of fire, flood, fever, or famine. But Galvestonians hung on and stayed.

Civil War: Capture and Recapture

On December 25, 1862, after Federal ships had blockaded Galveston for some time, the island finally surrendered to a fleet under Commander William B. Renshaw. But Galveston did not long remain in Federal hands. On New Year's Day, 1863, General John B. Magruder ("Prince John" to his intimates) retook the island for the Confederacy. Bringing up ships "armored" with cotton bales, Magruder routed the Federal forces and restored the Stars and Bars atop Galveston flag-staffs, where they remained until the end of the war.

1865-1900

When U. S. General Gordon Granger took over Galveston on June 19, 1865, he declared on that day that all slaves in Texas were free. Thus was established the annual Negro holiday, "Juneteenth," or Emancipation Day in Texas.

The Reconstruction Period was perhaps kinder to Galveston than it was to some areas in the South. With epidemics of yellow fever finally conquered, trade was expanded and shipping increased steadily. Congress in 1889 made Galveston a deep-water port and improvements were begun on the channel and the harbor. These improvements, costing more than \$6 million, were completed in 1896. By 1900, Galveston was a city of some 38,000 people, its foreign commerce brisk and its outlook bright.

The Big Storm

By 1900, Galveston was no stranger to storms. Many times during the 19th Century, fierce winds and waves, brewed in the angry reaches of the Gulf of Mexico, had raged against the island during the "hurricane season" (late summer and early fall). But the mind of man had not dreamed of, and the eye of man had not seen, such awesome fury as the hurricane that battered Galveston into wreckage on Saturday, September 8, 1900. Forgetting all others, natives of the island still speak in hushed tones of that one.

They call it simply "The Big Storm."

Beginning about the 4th of September in that fateful year, the Washington weather bureau had told of a hurricane gathering in the Gulf and had cautioned marine craft at Galveston against putting out to sea. The barometer began to fall on September 6th and continued to fall throughout the next day. On September 8th, before the hurricane reached full fury, the barometer had dropped to 28.48 inches, unofficially declared at that time to be the lowest reading in the history of the weather bureau.

Dr. I. M. Cline, local forecast official, and his associates estimated the maximum velocity of the winds to be 120 miles an hour! The anemometer of the weather station had been carried away after it had recorded spurts of more than 100 miles an hour, and the worst was still to come.

Adding to the wind's destruction, mighty waves lashed over the island, pounding everything with pile-driver blows. Bath-houses and homes along the beach were picked up and swept away as if by a giant broom. Scarcely a building on the island was untouched; more than 3600 were completely destroyed. Ships in the harbor and riding at anchor in the Bolivar roadstead became playthings for wind and wave.

The fate of the *Taunton*, a British ship, illustrates the incredible force of the hurricane, which literally blew the 4000-ton steamer "into the next county." By the time the storm hit, every precaution had been taken to secure the *Taunton* with anchors and cables. The ship held at her moorings for some hours before her chains snapped. Then, in the words of an account written shortly after the storm, the vessel "... now caught by the two forces of wind and water, acting in concert, was hurled at tremendous speed across the channel, across Pelican Spit, across Pelican Island, up the bay, along the shallows, far up where ocean vessel never went before and probably never will go again, and did not stop until she was dashed head-on to a bank thirty feet high, called Cedar Point, twenty-two miles from deep water!" When the storm struck, the *Taunton* was in Galveston County; when it blew itself out, the ship was in Chambers County!

Other ships met similar fates. One, the *Roma*, broke away and was carried this way and that by vagrant winds before finally being bashed against the railroad bridge that connected Galveston with the mainland. An-

other, the *Kendal Castle*, was cast up on dry land at Texas City. Huge steamships were sunk, battered, and carried away as if they were toys. Of small craft, hardly a stick or a spar remained. Sunday, September 9, revealed as complete a picture of horror and destruction as any city has had to look upon.

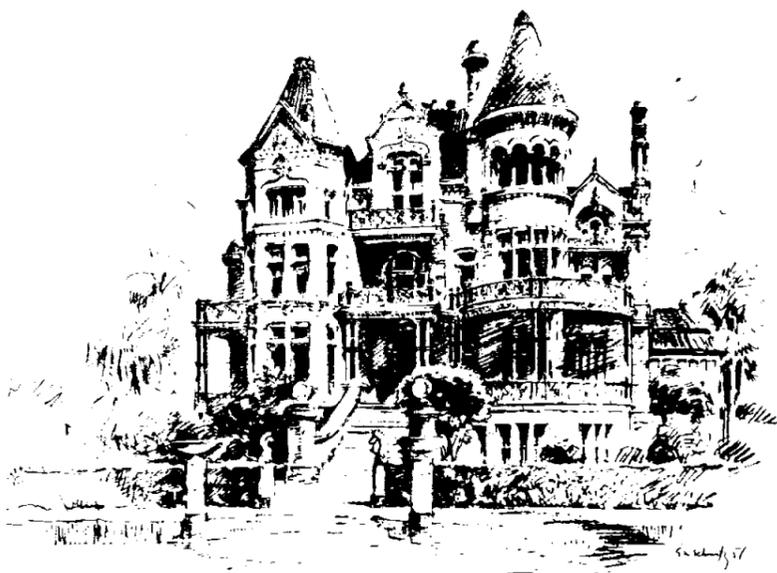
Human life was not made to withstand such violence. Of Galveston's 38,000 people, it has been conservatively estimated that 6000 lost their lives in the storm... some say more. The exact total was never known. More than 8000 survivors were left homeless, many of them destitute. Until contact was established with the mainland and a call sent for help, Galveston for a time lived up to its prophetic motto, *Yo Solo* (I Alone), taken from the escutcheon of Count Bernardo de Galvez.

As soon as possible on the 9th, survivors went about the grim business of cleaning up the stricken city. Help came soon, in the form of money, men, supplies, and the Red Cross, with Clara Barton herself in charge. With wreckage cleared away, the dead buried, and order restored, the people of Galveston set about to build a new and better city. A great seawall was built, extending 17 feet above mean low tide, a bulwark that proved its value during another great storm in 1915. This hurricane was so violent that it blew a three-masted schooner in from 100 miles out in the Gulf, lifted the ship over the ramparts, and hurled it into the grounds of Fort Crockett. But the barrier held, and only eight lives were lost. It appeared that the seawall had at last made Galveston safe from its oldest and deadliest enemy, the sea.

Galveston Today

Texas' oldest deep-water port, Galveston enjoys a huge export business built around three main products of the soil: sulphur, wheat, and cotton. The harbor is the world's largest sulphur port, handling more than a million net tons of sulphur every year. Wheat from the nation's grain belt comes here to be shipped all over the world; one grain elevator has a capacity of six million bushels. Common sights on streets near Galveston's wharves are the small, tractor-like vehicles that pull strings of cotton bales behind them.

Fishing, a sport for the casual visitor, is big business for boat-owners and operators of Galveston's "Mosquito Fleet." One of the most colorful segments of the island's industrial scene,



The Bishop's Castle—Galveston

these boats leave their docks before dawn and return at dusk, laden with the day's catch of fish and shrimp. On its way in and out of the harbor, the fleet is accompanied by a faithful, if somewhat raucous, escort of screaming gulls. The name "Mosquito Fleet" dates from earlier times, when small sailboats, their shrimp nets flapping in the breeze, swarmed together like mosquitoes.

It is only natural, in a port the size and consequence of Galveston, that local industry and business should be large and brisk. Manufacturing plants on the island employ about 10,000 people and the annual payroll is more than \$30 million. Wholesale and retail trade locally bring in more than \$100 million a year. Hotels and beach resorts are filled a large part of the year with thousands of tourists and visitors who flock to Galveston's famous surf playgrounds.

Galveston Houses

In sharp contrast with the tall hotels and modern tourist courts which dot the beach at Galveston are the colorful homes farther inland. Here, in the mixed architecture of their dwellings, is a positive clue to the varied natures, nationalities, and tastes of the people who settled Galveston. Rubbing shoulders with French gables are villas whose original builders may have come to this country from sunny Italy. Spotted here and there among typical "Texas" houses are rambling bungalows rich with the flavor of the Louisiana bayous. Occasionally, as one drives along palm-studded esplanades, some jewel of an old Southern plantation home, resplendent with its huge columns, gleams brightly ahead. The Spanish-style *hacienda* is not uncommon, and nearby one may see a structure whose nautical lines reflect the tastes of some seafaring man, perhaps a retired ship's captain.

The moldering remains of the Lafitte House are surrounded by an air of mystery. A many-gabled affair of French architecture, it was probably built by the pirate after his famous *Maison Rouge* had collapsed under the fury of the 1818 hurricane. It is a gaunt grey skeleton of a place, probably not used since its master sailed away.

The Menard House ("The Oaks") in earlier times was the center of Galveston social life. The city's first local Mardi Gras

celebration was held there in 1853. Col. Menard built his mansion in 1838, bringing its famous Ionic columns and white pine lumber by sailing boat from Maine. Today, it is the perfect picture of an old Southern plantation home. Now owned by heirs of Capt. E. N. Ketchum, who bought it in 1880, the Menard House has been selected by the federal government as a Historic Building.

The Williams House, also built in 1838, is more reminiscent of the gracious life and easy living of the Louisiana bayou country. It has a brick kitchen and a built-in brick oven. Its huge fireplace still remains from a day when some of the cooking was done with crane and pot-hook. Surrounded by palm trees, the white pine lumber and handhewn sills of the Williams House have withstood the worst hurricanes the Gulf has offered.

The 3-story Gresham House, home of the Bishop of the Diocese of Galveston, is often called "The Bishop's Castle." Built by a Congressman and Civil War veteran, it is a castle indeed. Above its steep-pitched roof rise minarets and ornamented chimneys. Its architecture follows no single pattern, but is a mixture of many. Delicate wrought-iron balconies and grilles and a mixture of building stones feature the outside of the castle. Inside, it is rich with many kinds of marble and fine woods from all over the world.

If there is any kind of building "typical" of Galveston, it is the house with the raised first floor reached by a short, steep stairway. Perched above the ground, these raised dwellings seem to reflect a gnawing dread that even a 17-foot seawall might not be enough to ward off a sea-demon in its full anger. Along some streets, strings of raised homes, their walk-ups arranged with geometric precision, present a quaint and unusual picture.

Salute to the Pioneers

In the history of Galveston there is much to remind one of the history of all Texas. It is a tale of pioneers choosing a home and refusing to budge from it, in the face of hardships and disasters. Storms could not dislodge them. Fires and floods swept their homes; fevers thinned their ranks; still they built for tomorrow. And finally they conquered their ancient foe, the sea. It is a tale worthy of Texas pioneers.



Ave. L and 18th Sts.—Galveston

Long fight with short stick . . .



The SPACE NEWS ROUNDUP, an official publication of the Manned Spacecraft Center, National Aeronautics and Space Administration, Houston, Texas, is published for MSC personnel by the Public Affairs Office.

Director Dr. Robert R. Gilruth
 Public Affairs Officer Paul Haney
 Editor Terry White
 Staff Photographer A. "Pat" Patnesky

Receive Quality Increases



Atlas C. Chance
Supply Branch

C. L. Wagner
Supply Branch

Spanish Club Forms Classes

The MSC Spanish Club in its August 22 and 29 meetings reviewed proposals from the

Garcia School of Spanish and from the Berlitz School of Languages for the inauguration of courses in conversational Spanish in the near future. Firm plans for these classes will be announced in the September 15 Roundup.

The courses will be open to MSC and contractor employees and their families. Emphasis will be on attaining speaking ability rather than on grammar rules.

For additional information on the Spanish Club and the course, call Norman Chaffee at 4871, Steve Gilbreath at 2921, Jose Perez at 5431, or Nancy Shrimplin at 7411.

The next Spanish Club meeting will be Tuesday, September 5 at 5:15 pm in Room 108 Bldg 13.

Todos deben tratar de venir. Todos son bienvenidos.

Dome Night Set Sept. 16

September 16 has been tentatively selected as MSC Night at the Domed Stadium, with a pizza-and-beer party in the Domeskeller prior to the Astros-Mets game.

Tickets will be \$5.50 for a couple and will include food and mezzanine seats for the game.

Art League Plans Guest Artist Series

The Clear Creek Art League has announced its schedule of guest artists for the 1967-68 season. Starting September 19, the League will meet the third Tuesday of each month in the League City State Bank at 7:30 pm.

MSC employees and their spouses are invited to join the League. Annual dues are \$3 for a single membership or \$10 for a patron. Persons interested in taking part in the activities should contact Marian Feeley, 115 Harborcrest, Seabrook.

Guest artists scheduled for League meetings are: September - Mrs. W. S. Heckman, weaving; October - Jean Buchanan, pottery; November - Allison Joy, portraits; December - membership juried show; January - Eva McMurray, painting; February - Pat Foley, sculpture; March - Don Bolen, water colors; April - membership all-media show, and May - Richard Stout, painting.

Study Shows Mars More Cratered Than Mariner IV Photos Revealed

Mars is more densely cratered than preliminary photos transmitted by the NASA's Mariner IV indicated, scientists and astronomers at the conference of the International Astronomical Union were told last month in Prague.

Dr. Robert B. Leighton of the California Institute of Technology, Pasadena, cited data derived from a two-year study of the Mariner IV photographs of Mars, indicating that the planet's surface is pockmarked by three times as many craters as appeared in early photos.

The use of new photo interpretation techniques revealed the additional topographic features. They indicate that craters and other surface features on Mars show a striking similarity to the surface of the Moon, although the planet is smoother

than the Moon, because of more effective erosion processes.

Studies of the Mariner IV photography were recently completed by Dr. Leighton and a team of four other scientists.

The 21 photographs of the Martian surface taken July 14, 1965, at distances from Mars ranging from 7,000 to 10,000 miles, were registered on a vidicon television tube, and then radioed to Earth twice during a period between July 15 and August 3, 1965, over distances of 135,000,000 to 148,000,000 miles.

Since then, the photographs have been prepared in several separate forms to allow detailed analysis. One technique presents the photographs in a numerical form that provides a light intensity value for each point in the photographs. Each photograph has approximately 40,000 such points.

This portion of the work took more than a year because it required a careful correction of the intensity at each point in a picture, using the measured sensitivity of the vidicon tube to establish an accurate intensity for each point.

Another study made use of these calibrated picture intensities, stored on magnetic tape. It included computer enhancement of the photographs for reduction of the electronic noise present in each picture, sharpening of detail, changing of contrast to intensify shading and highlights, and a special computer-generated picture called a variance plot in which smooth areas are shown in black and rough areas in white.

By varying the levels of contrast in reproducing the series of computerized pictures, scientists were able to resolve specific features more clearly. In many cases features not recognized in the original pictures were made visible through these enhancement techniques.

The detailed photo analysis revealed 300 clearly-defined craters plus more than 300 additional possible craters. (The original estimate from the unprocessed pictures was less than 100 craters.) Also visible in several of the pictures are long relatively straight features in the Martian terrain. Some of these straight features, called lineations, range from 100 to 200 miles long. Others are curving and less sharply defined. Some appear as ridges, others as depressions. The widths that have been measured range from 2 to about 7 miles. The lineations appear to be related to fractures or fracture zones in the Martian crust.

These specific features are not the much-discussed canals of Mars because they are too narrow to be visible from Earth, but they may be related to at least some of the markings earlier identified as canals. They also resemble fault lines indentified in lunar photos.

One picture shows a long, gently curving smooth area about 5 to 10 miles wide. This feature is not visible in the contrast-enhanced picture, and seems to be distinguishable only by its smoothness relative to the surrounding terrain.

Radio Controllers Resume Meetings On Monthly Basis

After a summer hiatus, the MSC Radio Control Club is planning its first fall meeting for Tuesday, September 12. Meetings are normally held on first Tuesdays, but because of the Labor Day weekend, the September meeting is one week later.

Club members and newcomers are urged to attend this first meeting since April. Although no business meetings were held, the Club has held sessions on the Antenna Test Range during the summer at which flying took precedence over business matters.

THE MSC Radio Control Club is open to all MSC and contractor employees at MSC. Aircraft being flown by members range from simple 2 1/2-foot span rudder-controlled airplanes to six-foot span 12-pound biplanes with full-proportional controls. Whatever equipment the newcomer flies, there is sure to be an RCC member happy to assist him in joining the activity.

Additional Club information can be had from Bill McCarty at 5393 or Bob Ernull at 4286.

Couples Bowling League Has Three Spaces Open

Got a spare tire around the waist? Perhaps bowling will lose it for you.

The Moon Shot Couples Bowling League needs two couples and one man to complete the teams. League play starts September 12 at 6:30 pm at the Mimosa Lanes.

Call Shirley Yeater at 946-2390 to join up.

The Working Girl's Curse

(She oftentimes uses strong adjectives)

She hops out of bed at a quarter to eight;
 In two minutes flat she's out her front gate.
 She fires up her "bug" and slaps it in high;
 Twelve minutes to go and she has to fly.

Like Foyt up at Indy she drives down the road;
 Rounds corners on two wheels, jumps curbs like a toad.
 She scares other drivers half out of their wits;
 They often will curse and some have nervous fits.

Five minutes to go and NASA's ahead;
 The guard's seen her coming - he's already fled.
 Two minutes to go, the back door's in sight;
 If she could drive in, she'd make it all right.

She drives like a winner, but loses the race -
 At eight o'clock sharp there's no parking space.

- Rex Carrs

- ★ NOW A NEW WAY TO
- ★ HELP YOUR COUNTRY AS
- ★ YOU HELP YOURSELF
- ★ U.S. Savings Bonds
- ★ New Freedom Shares

Co-op of Month



OUTSTANDINGLY CAPABLE is the way Claudette Calvin's supervisors describe her work in the Antenna Systems Section of IESD. She presently is working on the design, development and testing of the Lunar Staff Antenna for the Lunar Surveying System Apollo Experiment. Claudette is an electrical engineering major at the University of Houston and is in her junior year.

Roundup Swap-Shop

(Deadline for classified ads is the Friday preceding Roundup publication date. Ads received after the deadline will be run in the next following issue. Send ads in writing to Roundup Editor, AP3. Ads will not be repeated unless requested. Use name and home telephone number.)

FOR SALE/RENT—REAL ESTATE

90x200 heavily wooded corner lot in Oak Hollow, Dickinson. Surrounding lots developed. \$4500. D. C. Wade, MI 9-0554.

4-bdr 2-bath Spanish contemporary in El Lago, 2500 sq ft, 1/2 acre, landscaped, fenced, 36-foot heated pool, assume 6% loan. W. A. Lee, 877-1203.

4-bdr 2-bath brick in Huntsville, Ala., 5 1/4 VA, \$121.65/mo, \$2500 equity for \$350 (includes tax prep and ins), 4-foot chain-link fence, close to school and shopping, on 120x150 corner lot. W. H. Hooper, 488-4120.

4-bdr 2-bath brick, double garage, built-ins, large lot, fenced, 2 blks from elem school. \$22,000. Equity and assume payments. Marvin Bernhard, 932-3056.

Three large wooded lots in Shoreacres, 125x350 each. Kenneth Wilson, RE 3-8176.

4-bdr 3-bath, extra large den, covered patio/carpools, access to swimming pool and boat ramp, in Bayou Brae, League City, 2 1/2 years old. \$27,500. George Carlisle, 932-2836 after 5.

3-2-2 brick contemporary in Bayou Chantilly, Dickinson; 2109 sq ft, sunken lvg room, fam room w/corner fireplace, built-ins, utility room, walkin closets, centra heat/air, draperies, antique-gold carpeting, terrazzo, enclosed patio, fenced, 10 min to MSC, no city taxes. \$23,200. GI-no down. R. L. Latta, 534-4380.

FOR SALE—AUTOS

66 Impala 4-dr hardtop, fully equipped, will arrange financing, best offer. James Lovell, Seabrook, 877-3250.

67 Corvette convertible, 427 engine, 3 dual carbs, air, FM, Firestone wide ovals, 2400 miles. R. F. Gordon, NB 591-2389.

65 Rambler American 440 sportscoupe, sell under book list for best offer. Jack Price, NA 2-4454.

57 MG, runs, engine OK, \$150. Jack Price, NA 2-4454.

61 Renault Dauphine, good work car, \$200 or best offer. Perry Sloan, 932-4819.

64 Jaguar XKE roadster, B&W top and interior, radio, wire wheels, never raced, no reasonable offer refused. John Boynton, MI 3-0926 or HU 4-3565.

60 Corvair, good work car, \$175. S. F. Squires, 534-3137 after 5.

66 Ford Galaxie 500 convertible, air, autoshift, power S&B, FM, 390 2V, 14,000 miles, best offer over \$2000. John Pierce, HU 8-0354.

59 Ford 2-door, \$275. John Pierce, HU 8-0354.

67 Corvette Coupe, 427 engine, 3 dual carbs, FM, air, pwr steer, 4-speed close-ratio trans, 3.70 rearend, 10,000 miles. P. R. Charlton, 944-0208.

57 Buick Century 4-door, good running condition, new seat covers, pwr steer/brks/windows, \$350. J. F. Park, HU 7-1255.

64 Chevy Impala 2-door hardtop, auto-shift, new WWs, radio, tinted glass, dependable college car. Al Bond, HU 2-7852.

67 Chevy Impala 2-door hardtop, air, black vinyl int, 18,000 miles, almost new tires. Lists for \$4400—sell for \$2800 (owner buying 68). Jim Donnell, 877-1746.

63 Rambler American, good cond, 1 owner, \$500. C. G. Fuller, 591-3968 after 5:30.

FOR SALE—MISCELLANEOUS

New Gorham "Strasbourg" sterling silverware, sell individual pieces or all. Dennis Doherty, HU 8-0182.

Sailboats: 13'9" Scorpion board-boat, 15' 3" Demon sloop. Bob Ward, 591-2182.

Kodak automatic 35mm camera, integ lightmeter, case, flash. Cost \$130 new; take best offer over \$45. John Boynton, MI 3-0926 or HU 4-3565.

Baby bed \$22, highchair \$10, Portacrib \$10. Jack E. Capps, GR 1-3753.

Coleman 2-burner portable gas stove, need minor repairs, \$5. B&W TV antenna, \$5. 30-ft telescoping antenna pole, \$15. Rural mailbox w/pole, \$5. Fuel tank for abrd motor, 6-gals, \$5. Two sets bamboo blinds w/drawstring, \$6/set; \$10/all. USAF officer uniforms, current styles, incl mess dress; blouses 36-38R, pants 32"x33", best offer. Gary W. McCollum, 11027 Sageleaf Lane, HU 7-2047.

Sears 4-burner gas range, grill, oven. \$75. David Saucier, GR 9-4354.

AKC registered collie, 1 1/2 years, obedience tng. William Callegari, 729-4394.

66 model 30-in Kenmore gas automatic range, over/under double oven, white. Cost \$450; sell for \$300. William Callegari, 729-4394.

Four used 7.75x14 WW tubeless tires, \$3 each or all for \$10. John J. Cunningham, HU 8-1390.

62 IBM tan Selectric typewriter, 11-in carriage, \$265. Minolta 16 Model P mini-camera and case, used once, \$17. Marlo Krisberg, MI 4-3147.

Lone Star Fiesta 16-ft boat and trlr, 40-hp w/elec start and alternator, boat reworked. \$650. A. Hoffman, GR 4-3320.

Polaroid model 250 camera. Fountainette dispenses soda and 3 drinks. Code-a-phone answers telephone automatically and records messages. Ann Hardeman, GR 1-4776.

Renault parts: disassembling two Dauphines, sell anything from doorhandles to seats and fenders, must sell all by Sept 10. Ken Cashion, HU 2-7917.

RCA Estate gas range, oven, griddle, storage drws, broiler, clock, lighted top and oven, 40 in wide, good condition. Carl D. Scott, HU 2-3011.

15-ft Lone Star fibreglas boat 35-hp Johnson, 2 gas tanks, canvas cover, trailer, all good condition, \$600. G. A. Nixon, HU 6-0981.

Beige 4-piece sectional sofa, xclnt condition, \$90. Judy Box, GR 2-6936.

Emerson Quiet-Kool 4000-BTU window airconditioner, used two months. Cost \$119, sell for \$75. G. E. Aircooler, good condition, \$25. Heathkit Model GC-1A Mohican communications rcvr, five bands BC-shortwave, AC-DC, 10-transistor, single conversion superhet, constructed, tuned, aligned. \$85. J. W. Samouce, HU 8-0406.

Free sailing lessons for beginning adults. Ken Goodrick, 942-2919.

Stereo speaker pair: 10" and 3" in wood cabinets, both for \$30. Ken Goodrick, 942-2919.

Light olive matching couch and chair, \$50. Vance Brand, NB 591-2592.

19-in Zenith portable TV, one year old, xclnt condition. Michael Felix, 591-4528.

Garage sale Saturday Sept 9 at 7 am, Dorothy Szopski, 1301 Avenue A, under carport No. 48, South Houston.

Green-gold sofa bed, matching green chair, dropleaf dining table w/2 chairs, ideal for apt or den, all for \$85 or separate. Also 4-drw mahogany-finish desk, \$20. J. Mitchell, NB 591-4704.

Womens Spaulding Sandra Haynie golf clubs: woods 1 and 3, irons 3,5,7 and 9, putter and bag, all new—never used, \$90. F. C. Toole, 946-0265 after 5.

19-in 64 Zenith portable TV, good condition, \$45. Swivel TV bookcase stand, dark maple, \$13. C. H. Eldred, GR 1-4332.

16-cu ft Signature refrig-frzr w/icemaker, white, 6 mos old, \$200. 21-in Sylvania portable TV w/stand, 10 mos old, UFH, \$85. Early American dropleaf harvest table w/4 chairs, \$25. Apt-size Vesta range, xclnt condition, \$20. Registered 5-yr old quarter mare, black, trained for roping, dogging and working cows, w/saddle, \$300. Lenora Patterson, MI 4-7147.

Rugs: 12x12 antique gold Wonderplush, \$100. 9x12 off-white nylon, \$50. James B. Irwin, GR 1-0373.

24-ft Islander sloop, full racing and cruising gear, cost over \$8000 new; firm price: \$5950. R. J. Piotrowski, NB 591-2153.

WANTED

Camper for 67 Ford pickup. Monte McCollum, HI 2-0986.

Want bookcase, dictionary stand, 26-in boy's or girl's bike. Noel Hensley, Ext 2553 (no home phone).

100 nude Barbie dolls are in desperate need of clothes by Christmas for distribution in local orphanage. For info call Bill Wetzel, HU 4-5434.

Want nice home for gentle male kitten, black and white, short hair, good with kids. H. Erickson, MI 9-0396.

Want part or registered miniature/toy Pekingese puppy. Carolyn Corley, 944-0854.

Want one or two roommates to look for apt between Gulfgate and city limits. Gerard Guiterrez, Ext 5346 from 12 to 12:30 days (no home phone).

Wanted: people to take the lion's share of fun, food, frolic at the MSC picnic October 14 in Galveston County Park in exchange for a ticket. Phone Mary Dunn at 3941 for info and read the Roundup and bulletin boards.

Wanted: Rider to Chicago, leaving around Sept. 8. Ed Jerome, Ext 3268, 8-4:30. (No home phone).

25-Year Service Awards



Joseph W. Kreske
Supply Branch

Pete D. Strahl
Reproduction Services

Country Theater Holds Final 'Annie' Runs

A number of MSC people have important roles in "Annie Get Your Gun", the Irving Berlin musical comedy having its final performances tonight and tomorrow night at the Clear Creek Country Theater in League City.

Within the cast of over 60 performers, the largest in the history of the MSC-area community theatre, are at least 14 people who either work with MSC and its affiliates or have husbands, wives, or fathers who do.

The leading role of Annie Oakley is played by Mrs. Jack Warren of League City, whose husband is employed by Brown & Root-Northrop. And the secondary male lead of Charlie Davenport is played by Bill Milligan of Dickinson who works in the office of Director of Engineering and Development. Milligan's two daughters, Sharon and Donna, are also in the play.

Fred Widdon of Houston plays Buffalo Bill. Widdon works in Dept. 673-10 for Lockheed Electronics. Mitch Vanya, who

works in the Survival Lab at MSC, is in the chorus and sings in two special numbers.

The entire Greg Odams family of Clear Lake City is in the play. Greg, who works for Philco-Ford Corporation in the Education and Technical Services Division, is in the chorus as are his wife Betty and daughter, Betsy.

Len Baumel who works for Lockheed in Building 16 in AGC Simulation is in the chorus as is his wife Gladys. Carolyn Detmore, of Flight Support Division, is in the play playing an important role in the chorus.

A summer employee in Building 2, Larry Speck of Friendswood, plays Tommy Keeler, one of the male leads in the musical-comedy classic.

Children in the play whose fathers are MSC employees include Pam McAllister, daughter of Fred McAllister of Nassau Bay; Jimmy Hodge, son of Ralph D. Hodge of Nassau Bay; and James and Nancy Kinzler of Timber Cove.

Country Theater president Dave Goldenbaum of the Apollo Spacecraft Program Office says that "Annie Get Your Gun" is "one of the most entertaining and exciting musical productions in the theater's history."

Tickets at \$2 each may be reserved by calling 932-3714.

"Annie" opened August 24, with performances August 25, 26, 27 and 31, and September 1, and 2.

Aero Club Shows FAA Altitude Film

The September 11 Aero Club meeting will feature a showing of the FAA film "Density Altitude." Especially significant to club members flying cross-country to or via high-altitude airports, the film is in color and runs 25 minutes.

All active Aero Club members are urged to attend the meeting, at which an important announcement will be made regarding the future of the club. The announcement has caused the instrument ground school, originally scheduled to begin September 13, to be postponed for at least a month.

"UNDER THE BIGTOP" WILL BE A

CARNIVAL

OF FUN FOR THE WHOLE FAMILY

TROPHIES

RIDES

PRIZES

RACES

GAMES

ITS THE ANNUAL

NASA PICNIC

SAT., OCT 14th

TO BE HELD IN THE

GALVESTON COUNTY PARK

LEAGUE CITY

FOOD

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BEER

DANCING

CONTESTS

FOR INFORMATION, ...

CALL MARY DUNN - 3941

& MORE

Straight Talk from your Credit Union

Interest—here we go again!

The subject keeps coming up! It seems that almost daily we have someone come in to have us help with accumulated bills, and to get away from high interest charges. Last week we had a member who looked into the interest charges he was paying on several "accounts" and to two finance companies. He was appalled. In one case he was paying 22% interest! He wisely consolidated his loans to one loan with us, taking advantage of our low interest rate, saving him several dollars each month in interest!

You too can be helped. Why don't you look into the interest charges and carrying charges you now pay. Chances are, you'll come to see us too!

Because it is so short and so simple, this little guide concerning INTEREST charges is being offered for your interest and education.

Assume your charges are based on the initial amount you owe and are included in 12 monthly installments. Then:

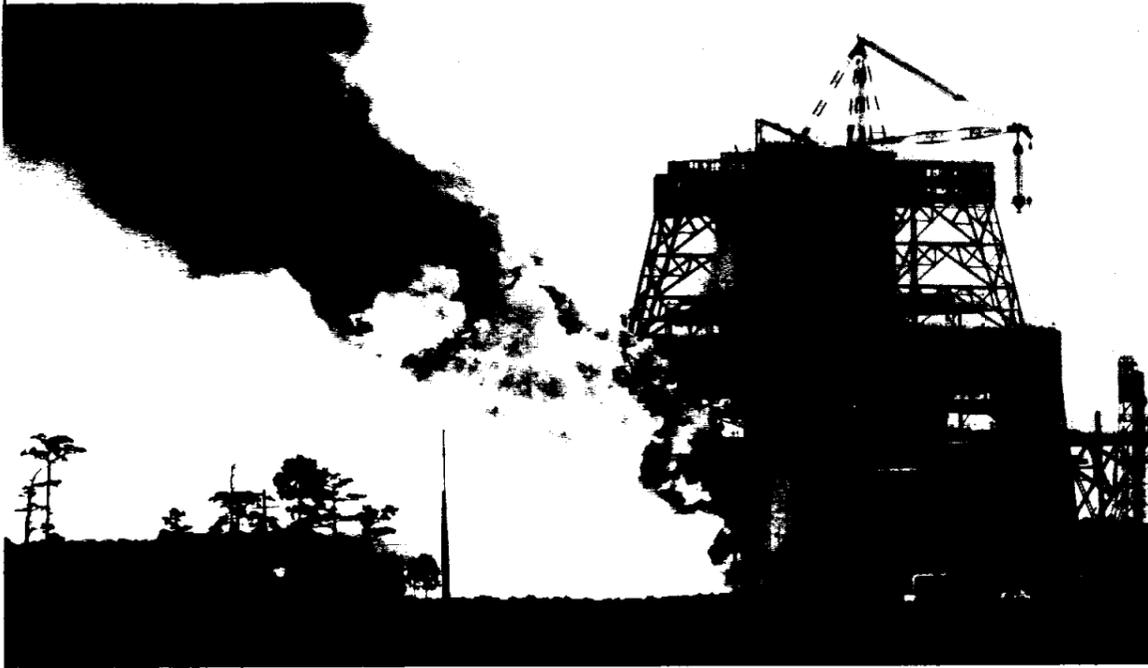
IF YOU'RE CHARGED ANNUAL RATE	ANNUAL RATE
\$4 per \$100 or 4% a year	7.4%
\$6 per \$100 or 6% a year	11.1%
\$8 per \$100 or 8% a year	14.8%
\$10 per \$100 or 10% a year	18.5%
1% a month	22.2%

Or assume your charges are based only on the unpaid balance of your loan. Then:

IF YOU'RE CHARGED ANNUAL RATE	ANNUAL RATE
3/4 of 1% a month on unpaid balance	9%
1% of 1% a month on unpaid balance	10%
1 1/4% a month on unpaid balance	12%
1 3/4% a month on unpaid balance	15%
2% a month on unpaid balance	18%
2 1/2% a month on unpaid balance	30%

Banks or other lending agencies do not normally provide loan protection in their interest charges without extra charge. Your MSC Federal Credit Union does provide loan protection without extra charge.

Sound and Fury



BRIEF INFERNO—The fifth Saturn V first stage S-IC flight article underwent full-duration static firing of 125 seconds August 25 at NASA Mississippi Test Facility, during which time the stage developed its full thrust of 7.5 million pounds.

ROUNDUP

SECOND FRONT PAGE

MSC Picnic Promises Something for All

Monsoon or shine, the fifth annual MSC Picnic October 14 promises a carnival of fun for the entire family—Shrine Circus clowns, lots of rides and games for the youngsters, and dance competitions for the teenagers. Music for dancing and listening will be furnished by the John Sylvia combo.

Athletic equipment will be available for those who want to organize a game of sandlot-type baseball or other games. And for the spectator types, several circus-motif exhibitions are being planned by the picnic committee.

Details will be announced in the *Roundup* as plans are firm.

For the chow-hounds, barbecue, beer and pop will be served on a ticket stub basis.

The picnic will be at Galveston County Park in League City.

Individuals who have had a secret yen to run away and join the circus are urged to call Betty Schick at 3371 or Rita Sommer at 2397 to volunteer to help in preparing the decorations and exhibitions. Additional picnic information can be had from Mary Dunn at 3941.

Revamped Apollo Pressure Suits Delivered for Thermo-Vacuum Tests

The first two Apollo space suits incorporating changes recommended by the Apollo 204 Review Board are scheduled to arrive at MSC early in September for thermal-vacuum and compatibility testing.

These will be up-dated versions of the A-6L Apollo pressure suit. The first production models of the re-designed Apollo suit, designated A-7L, are scheduled for delivery in mid-October.

Wherever possible, flammable materials have been replaced in the re-designed suit with non-flammable or low-flammability materials. Beta Fabric, a non-flammable fiber glass cloth, has been substituted for the outermost layer of Nomex. Beta Fabric has also been used instead of nylon to sheath electrical cabling. A Nomex liner has replaced the more flammable nylon liner of the previous suit. Flammable polyurethane has been replaced with non-flammable carboxy-nitroso rubber for boot soles and by a silicone material for helmet vent and shoulder comfort pads. And fire-resistant Kapton (plastic film)/Beta Fiberglass insulation has been substituted for the previous Aluminized Mylar/Division insulation.

The re-designed Apollo suit, in addition to being much more fire resistant, is also more comfortable and mobile than the original A-6L model. It also has an integrated thermal-meteoroid protective covering replacing the more cumbersome two-piece Thermal Meteoroid Garment (TMG), which was worn over the previous suit.

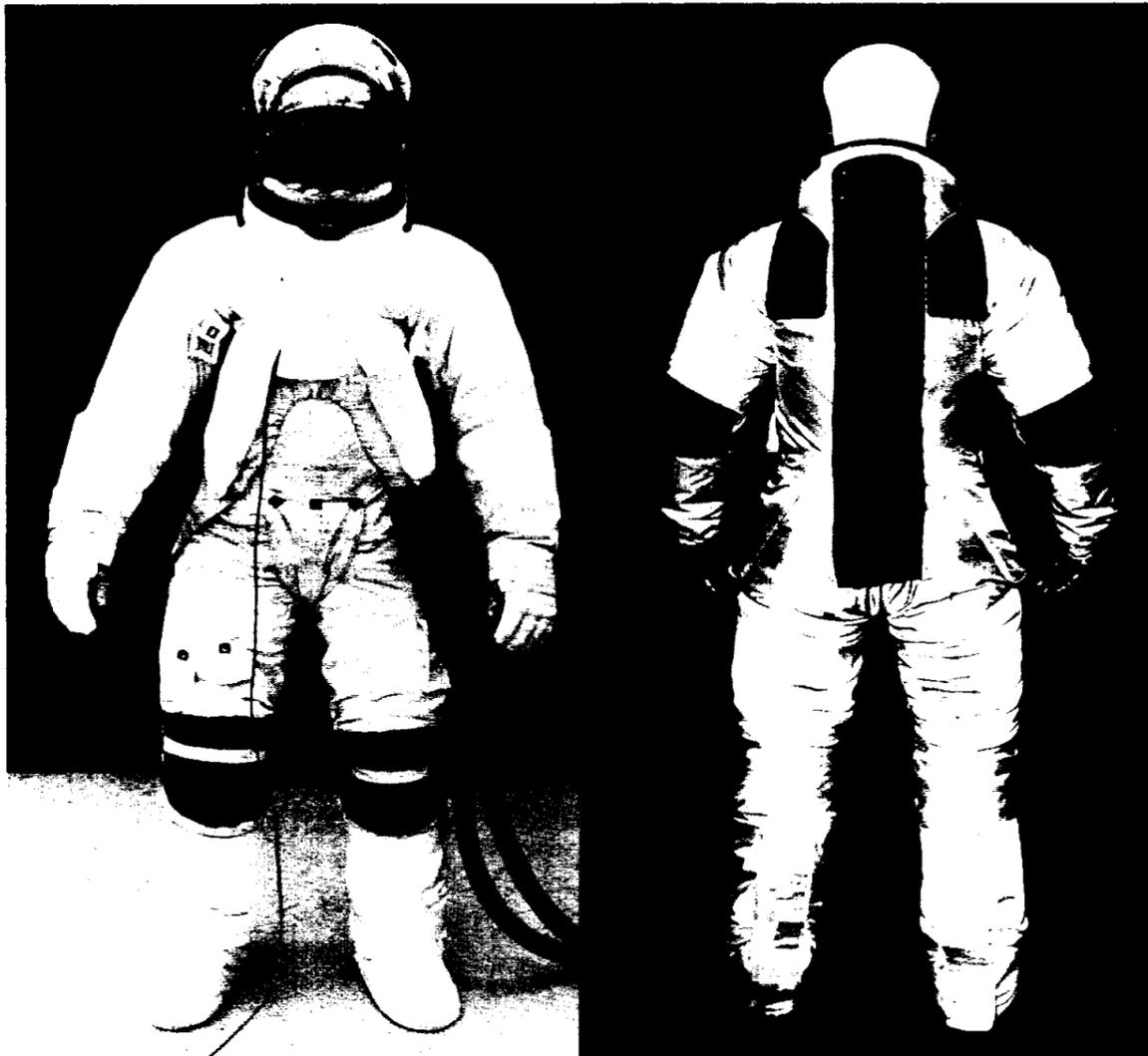
The re-designed Apollo suit eliminates pressure points experienced with the A-6L suit in the thigh, under the arms and over the shoulders. As in later model Gemini suits, the A-7L suit will have a double lock for helmet, glove and umbilical hose disconnects.

There have also been changes in the Apollo suit's outward physical appearance. It is now white rather than blue, and it has gray patches of metallic-fiber cloth over the elbows, knees, back and shoulders to protect the Beta Fabric from abrasion.

The A7-L suit is planned for use in all manned Apollo missions. It will be worn during pre-launch and launch phases of the mission and during re-entry. Throughout much of the rest of the flight, if all is going well, the crew may remove the pressure garments and don light weight,

unpressurized Beta Fabric flight suits.

The A-6L and the follow-on A-7L pressure suits are manufactured by the International Latex Corporation, Government and Industrial Division, Dover, Delaware, under contract to MSC. The Beta Fabric application to the re-designed suit was developed by Owens-Corning Fiberglas Corporation under contract to MSC. Nomex and nylon components of the suit are manufactured by E. I. duPont de Nemours and Co., Inc.



APOLLO HABERDASHERY—Changes recommended by the Apollo Review Board are incorporated in the up-dated A6L Apollo pressure suit. The outer surface is of nonflammable Beta fabric and the patches on shoulders, elbows, knees and back are of metal fiber cloth. International Latex Corporation is prime contractor for the suit.

RASPO — Downey Suggestors



Kenneth E. Willett
Suggestor of Month Award



Earl T. Macy
\$310 Suggestion Award

Group Life Plan Sign-Up Drive Set This Month

The NASA Employees Benefit Association has scheduled an enrollment drive for the month of September to enroll MSC employees, not currently enrolled, in the NASA Group Life Insurance Plan.

Any full-time, permanent employee is eligible to enroll in the plan and female employees may obtain the same amount of insurance as the men.

W. Kemble Johnson, president of the MSC chapter of the association said, "NASA's group plan is the sensible way to get additional family protection at amazingly low rates."

"Since 1952, NASA has been pooling its life insurances purchases to get higher protection for the lowest dollar cost and now more than 18,000 NASA employees have over \$260,000,000 of life insurance to safeguard the financial security of their families," Johnson stated.

Because many employees may not be aware of the plan's advantages, representatives of the company that underwrites the plan will be available on September 15 to answer questions and provide enrollment assistance. Appointments may be made by calling extension 4358.